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67097-360; EH-10974

IN THE SPECIFICATION

Please replace paragraph [0009] with the following:

[0009] In accordance with another aspect of the disclosure, a method for forming a cast part is disclosed. The method includes forming a ceramic core with at least one support element extending between adjacent solid portions of the core. The support element is formed with a cross-section designed to minimize operating stress in the cast part. A wax die is formed to define external geometry of the cast part. Wax is then injected into the wax die to form a wax pattern of the cast part. The ceramic core is placed into the wax die to produce the internal geometry of the cast part. Ceramic slurry is introduced into the wax pattern to form a mold shell. The mold is dried and the wax is melts when the mold is heated to a predetermined temperature. The mold is then cooled to a predetermined temperature and preheated to at least the melting temperature of the casting material. Molten casting material is poured into the mold, and then cooled in a controlled environment. The casting mold shell is removed from the cast part. The casting is then leached with a chemical solution to remove the ceramic core from the cast part. The cast part is inspected with N-ray to check that the core has been removed. The surface of the cast is etched and a laue'ding procedure is utilized to inspect the grain structure of the cast part. The surface of the cast part is inspected with fluorescent penetrate to determine whether surface cracking exists. The internal features of the cast part are inspected with X-ray. The cast part is machined to meet the specification and is then inspected for dimensional quality. Finally, the cast part is flow tested to check the internal passages.

Please replace paragraph [0027] with the following:

[0027] A cross-section 40 of the support element 38 is shown in FIG. 4. The cross-section is designed with generic curves defined below by several radii and corresponding arcs. The cross-section 40 can be scaled to a desired size for a given core 32. The cross section defines a shape that minimizes stress in the cast part. The cross-section 40 includes a first radius R1, a second radius R2, and a third radius R3 each defined by a center point 42, 44, and 46 respectively. The first radius R1 defines a circumferential arc 48, the second radius R2 defines a circumferential arc 50, and the third radius R3 defines a circumferential arc 52. The center point

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42 of the first radius R1 and the center point 44 of the second radius R2 are separated by a first distance D1. The center point 44 of the radius R2 is separated a distance D2 from the center point 46 of the third radius R3. A fourth radius R4 having a center point 54 is positioned such that a circumferential arc ~~s~~-56 defined by the radius R4 is positioned to be simultaneously tangent to the circumferential arcs 48, 50, 52 of the first, second and third radii R1, R2, R3 respectively. A fifth radius R5 having a center point 58 defines a circumferential arc 60 that is positioned opposite of the arc 56 of the fourth radius R4. The circumferential arc 60 of the fifth radius R5 is positioned so as to be simultaneously tangent to the first, second and third circumferential arcs 48, 50, 52 of the first, second and third radii R1, R2, R3 respectively. The cross-section 40 is bounded by the arcs 56, 60 of the fourth and fifth radii on the sides thereof and by the intersection of the arcs 56, 60 of the fourth and fifth radii at each end thereof.

Please replace paragraph [0030] with the following:

[0030] A method for forming a cast part with a ceramic core having at least one support element 38 ~~element~~ having a cross-section 40 designed to minimize operational stress in the cast part as well as provide stiffening support for the core 32 during the casting process is also contemplated by the present disclosure. The method includes forming a wax die (not shown) to define the external geometry of the cast part. The casting core 32 is inserted into the wax die. Wax is then injected into the wax die to form a wax pattern of the external shape of the cast part. Ceramic slurry is then introduced into the wax pattern to form a mold shell. The mold is dried and the wax is removed by heating the mold to a predetermined temperature to melt the wax. This heating process also increases the strength of the ceramic mold. The ceramic mold is cooled to a predetermined temperature and then preheated to the approximate melting temperature of the casting material. The molten casting material is then poured into the mold. The mold is cooled in a controlled environment. The casting mold shell is removed from the cast part and the casting core 32 is leached with acid of a type known in the art to remove the ceramic core from the cast part. The cast part is then inspected with N-ray to verify that all of the core material has been removed. The surface of the cast part is etched and a laue'ding procedure is performed to inspect the grain structure of the cast part and ensure structural integrity. The

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surface of the cast part is then inspected with a fluorescent penetrate to determine whether any flaws such as cracks have formed. The internal features of the cast part are inspected with X-ray. The cast part is then finish machined and inspected to final external dimensions. A flow test is performed to determine whether the internal passages were formed correctly.